

YUNTIAN THEODORE ZHU

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Citizenship: US

Education:

1979-1983

Hefei University of Technology, China

B.S. in Metallurgy, July 1983.

1985-1988

Institute of Metal Research, Chinese Academy of Sciences

M.S. in Materials Science and Engineering, April 1988

1989-1991

Oregon Graduate Institute of Science and Technology

M.S. in Materials Science and Engineering, July 1991.

1991-1994

The University of Texas at Austin

Ph.D. in Materials Science and Engineering, June 1994.

Teaching Experience:

Fall 2001

Processing and Synthesis of Advanced Materials (MAE 233A), Department of Mechanical and Aerospace Engineering, University of California at San Diego (UCSD).

Professional Experience:

1983-1985

Assistant Engineer, Luoyang Bearing Research Institute, Luoyang, China.

1994-1997

Director's Fund Postdoctoral Fellow, Los Alamos National Laboratory.

1997-present

Technical Staff Member, Los Alamos National Laboratory.

Honors:

Achievement Award, Los Alamos National Laboratory (1999)

Director's Fund Postdoctoral Fellowship, Los Alamos National Laboratory (1994-96)

Distinguished Lectureship, Sixth International Conference on Composite Engineering, Orlando, Florida, June 27-July 3, 1999.

Keynote Presentation, 2nd International Conference on Nanomaterials by Severe Plastic Deformation: Fundamentals-Processing-Applications, Vienna, Dec. 3-9, 2002.

Keynote Presentation, NATO Advanced Research Workshop on Nanostructured Materials by High Pressure, Donetsk, Ukraine, Sept. 22-26, 2004.

One of the Six Members of the International nanoSPD Steering Committee.

Advisory board, International Conference on Composite Engineering (ICCE/7, 2000).

Scientific Committee, International Conf. on Composite Eng. (ICCE/8, 2001).

Affiliations:

Member, International nanoSPD Steering Committee

Vice Chair, TMS MPMD Shaping and Forming Committee

Member, Tau Beta Pi (Engineering Honor Society)

Member, JT. TMS-SMD/ASM-MSCTS Mechanical Behavior of Materials Committee

Member, ASM international, The American Ceramic Society

Patents:

1. **Y.T. Zhu**, P.S. Baldonado, J.F. Bingert, T.G. Holesinger, and D.E. Peterson, "Compressive Annealing of BSCCO 2223 Superconductive Tapes." US Patent #: 6,195,870.
2. **Y.T. Zhu**, T.C. Lowe, H. Jiang and J. Huang, "Method for Producing Ultrafine-Grained Materials Using Repetitive Corrugation and Straightening," US Patent #: 6,197,129.
3. **Y.T. Zhu**, T.C. Lowe, R.Z. Valiev, V.V. Stolyarov, V.V. Latysh, G.I. Raab, "SPD processing of Ultrafine-Grained Ti and Ti Alloy for Medical Implants," US Patent #: 6,399,215.
4. A. Serquis, **Y.T. Zhu**, X.Z. Liao, D.E. Peterson and F.M. Mueller, "A Method for Synthesizing High Quality Superconducting MgB₂ Powders," US Patent #: 6,511,943.
5. **Y.T. Zhu**, A. Serquis, D.L. Hammon, L. Civale, X.Z. Liao, F.M. Mueller, D.E. Peterson, V.F. Nesterenko, and, Y. Gu, "Processing of High Density MgB₂ Wires and Tapes by Hot Isostatic Pressing," in review, US serial No. S-99,947.
6. **Y.T. Zhu**, R.Z. Valiev, V.V. Stolyarov, and Yu.R. Kobolov, "Processing Nanostructured Ti Foil by ECAP and Cold Rolling," US serial No. S-100,547.
7. **Y.T. Zhu**, T.C. Lowe, R.Z. Valiev, and G.J. Raab, "Continuous Processing of Ultrafine Grained Materials by ECAP-Conform," US serial No. 100,592.

Invited Talks:

1. 122nd Annual TMS Meeting, Feb. 21-25, 1993, Denver, Colorado.
2. Sixth International Conference on Composite Engineering, Orlando, Florida, June 27-July 3, 1999 (**Distinguished Lectureship**).
3. Fifth U.S. National Congress on Computational Mechanics, August 4-6, 1999, Boulder, Colorado.
4. NATO Advanced Research Workshop on Investigations and Applications of Severe Plastic Deformation, Aug. 2-6, 1999, Moscow, Russia.
5. 1999 TMS Fall meeting, Oct. 31-Nov. 4, 1999, Cincinnati.
6. 1999 Society of Engineering Science, Austin, TX. Oct. 25-27, 1999.
7. 1999 International Mechanical Engineering Congress and Exposition, Nov. 14-19, 1999, Nashville, TN.
8. The 24th Cocoa Beach Conference, Jan. 23-28, 2000, Cocoa Beach, Florida.
9. University of California at San Diego, Oct. 27, 2000 (**two topics on the same day**).
10. Workshop on Ultrafine Grained Materials, April 26, 2001. Hanyang University, Ansan, South Korea.
11. Annual Meeting of Korea Society of Metals and Alloys, Pusan, South Korea, April 27, 2001.

12. Illinois Institute of Technology, June 4, 2001.
13. University of California, Irvine, CA, Oct. 12, 2001.
14. TMS Spring Meeting, 2002, Seattle, WA, Feb. 17-21, 2002.
15. 2nd International Conference on Nanomaterials by Severe Plastic Deformation 2: Fundamentals-Processing-Applications, Vienna, Dec. 3-9, 2002 (**Keynote**).
16. Florida State University, Tallahassee, Florida, April 2, 2003.
17. Symposium on Severe Plastic Deformation, THERMEC'2003, July 7-11, 2003, Madrid, Spain.
18. Nanotubes, The 2nd Annual International Conferences on the Space Elevator, Santa Fe, NM, US, Sept. 12-15, 2003.
19. Nanomechanics Workshop, Center for Integrated Nanotechnology, Los Alamos National Laboratory and Sandia National Laboratory, Oct. 23, 2003.
20. Workshop on Nano-structures in the Environment and Technology, University of New Mexico, Albuquerque, Jan. 15-16, 2004.
21. Division review, Materials Science and Technology Division, Los Alamos National Lab., Feb. 17-19, 2004.
22. NATO Advanced Research Workshop on Nanostructured Materials by High Pressure, Donetsk, Ukraine, Sept. 22-26, 2004 (**Keynote**).
23. The Eleventh International Symposium on Plasticity (PLASTICITY 2005), Kauai, Hawaii, Jan. 4-8, 2005

Invited Journal Papers:

1. I.V. Alexandrov, **Y.T. Zhu**, T.C. Lowe, and R.Z. Valiev, "Severe plastic deformation: A new technique for powder consolidation and grain size refinement," *Powder Metallurgy*, **41**, 11-13 (1998).
2. **Y.T. Zhu** and I.J. Beyerlein, "Issues on Bone-shaped Short Fiber Composites and Future R&D Directions," *J. Advanced Materials*, **35**, 51-60 (2003).
3. T.C. Lowe and **Y.T. Zhu**, "Commercialization of Nanostructured Metals Produced by Severe Plastic Deformation Processing," *Advanced Engineering Materials*, **5**, 373-378 (2003).
4. **Y.T. Zhu**, T.C. Lowe and T.G. Langdon, "Performance and Applications of Bulk Nanostructured Materials," a Viewpoint set for *Scripta Materialia* (in review).

Invited Proceedings Papers:

1. **Y.T. Zhu**, I.J. Beyerlein, J.A. Valdez, and T.C. Lowe, "Micromechanics of Bone-Shaped-Short-Fiber Composites," *Proceedings of Sixth International Conference on Composite Engineering*,

edited by D. Hui, 1999, B49-52.

2. T.C. Lowe, **Y.T. Zhu**, S.L. Semiatin, and D.L. Berg, "Overview and Outlook for Materials Processed by Severe Plastic Deformation," *Investigations and Applications of Severe Plastic Deformation*, edited by T.C. Lowe and R.Z. Valiev, Kluwer Academia Pub., Dordrecht, 2000, pp. 347-56.
3. **Y.T. Zhu**, H. Jiang, J.A. Valdez, I.J. Beyerlein, "Mechanical Properties of Bone-Shaped Steel Wire Reinforced Cement," *Proceedings of Sixth International Conference on Composite Engineering*, edited by D. Hui, 2000, pp. 725-26.
4. **Y.T. Zhu**, "Properties and Nanostructures of Nano-Materials Processed by Severe Plastic Deformation (SPD)," *Proceedings of Workshop on Ultrafine Grained Materials*, Hanyang University, Ansan, South Korea, April 26, 2001.
5. J.Y. Huang, X.Z. Liao, **Y.T. Zhu**, F. Zhou and E.J. Lavernia, "Grain Boundary Structure of Nanocrystalline Cu Processed by Cryomilling," *Ultrafine Grained Materials III Edited by Y.T. Zhu, T.G. Langdon, R.Z. Valiev, S.L. Semiatin, D.H. Shin, and T.C. Lowe*. TMS (The Minerals, Metals & Materials Society), 2004 (in press).
6. Yu.R. Kolobov , G.P. Grabovetskaya, K.V. Ivanov, R.Z. Valiev, **Y.T. Zhu**, "Grain Boundary Diffusion and Creep of UFG Ti and Ti-6Al-4V Alloy Processed by Severe Plastic Deformation," *Ultrafine Grained Materials III Edited by Y.T. Zhu, T.G. Langdon, R.Z. Valiev, S.L. Semiatin, D.H. Shin, and T.C. Lowe*. TMS (The Minerals, Metals & Materials Society), 2004 (in press).
7. X.Z. Liao, Y.H. Zhao, S.G. Srinivansan, F. Zhou, E.J. Lavernia, M.I. Baskes, **Y.T. Zhu**, "Stacking Faults and Twinning in Ultrafine-Grained Al," *Ultrafine Grained Materials III Edited by Y.T. Zhu, T.G. Langdon, R.Z. Valiev, S.L. Semiatin, D.H. Shin, and T.C. Lowe*. TMS (The Minerals, Metals & Materials Society), 2004 (in press).

Symposiums/Sessions Organized and Chaired:

1. Co-Organizer and Co-Chairman: Symposium on Nanocomposites and Multilayered Materials, Third International Conference on Composite Engineering, New Orleans, Louisiana, July 21-27, 1996.
2. Symposium Co-Organizer, 1999 Meeting of Society of Engineering Science, Austin, TX, Oct. 25-27, 1999
3. Organizer and Session Chair, Novel Ceramics and Composites, The 24th Cocoa Beach Conference, Jan. 23-28, 2000, Cocoa Beach, Florida.
4. Session Chair, Infrastructure II, Sixth International Conference on Composite Engineering, Denver, Colorado, July 2-8, 2000
5. Co-Organizer, Symposium on Microstructural & Mechanical Property Relationships in Advanced Composites, ASME 2000, Nov. 5-10, Orlando, Florida.
6. Primary Organizer, Second International Symposium on Ultrafine Grained Materials, The 2002 TMS Annual Meeting, February 17-21, 2002, Seattle, WA.
7. Organizer, Workshop on Nanostructured Materials Processed by SPD, Feb.22, 2002, Los Alamos National laboratory, Los Alamos, NM 87545.

8. Co-Coordinator, Symposium on Severe Plastic Deformation, THERMEC'2003, July 7-11, 2003, Madrid, Spain.
9. Nanotubes, The 2nd Annual International Conferences on the Space Elevator, Santa Fe, NM, US, Sept. 12-15, 2003.
10. Primary Organizer, Third International Symposium on Ultrafine Grained Materials, The 2004 TMS Annual Meeting, March 16-20, 2004, Charlotte, NC.
11. Session Chair, Nanostructured Metal and Alloys, MRS Symposium P: Nanoscale Materials and Modeling Relations Among Processing, Microstructure, and Mechanical Properties, San Francisco, CA, April 12-16, 2004.
12. Co-Director, NATO Advanced Research Workshop on Nanostructured Materials by High Pressure, Donetsk, Ukraine, Sept. 22-26, 2004.
13. Primary Organizer, The Langdon Symposium, Flow and Forming of Crystalline Materials (An Symposium Honoring Prof. Langdon on the Occasion of His 65th Birthday), The 2005 TMS Annual Meeting, February 13-17, 2005, San Francisco, CA.
14. Primary Coordinator, Symposium on Severe Plastic Deformation, THERMEC'2006, July. 4-8, 2006, Vancouver, Canada.

Book Edited:

1. **Y.T. Zhu**, T.G. Langdon, R.S. Mishra, S.L. Semiatin, M.J. Saran, and T.C. Lowe, *Ultrafine Grained Materials II*, TMS, Warrendale, PA, 2002.
2. **Y.T. Zhu**, T.G. Langdon, R.Z. Valiev, S.L. Semiatin, D.H. Shin, and T.C. Lowe, *Ultrafine Grained Materials III*, TMS, Warrendale, PA, 2004.

Book Chapter:

1. **Y.T. Zhu** and D.P. Butt, "Nanomaterials by Severe Plastic Deformation," *Encyclopedia of Nanotechnology*, to be published by American Scientific Publishers (**invited contribution**).

Journal Publications:

1. **Y.T. Zhu**, B.L. Zhou, G.H. He and Z.G. Zheng, "A Statistical Theory of Composite Materials Strength," *J. Composite Materials*, **23**, 280-87 (1989).
2. **Y.T. Zhu** and J.H. Devletian, "Determination of Equilibrium Solid-phase Transition Temperatures Using DTA," *Metallurgical Transaction*, **22A**, 1993-98 (1991).
3. **Y.T. Zhu** and J.H. Devletian, "Precise Determination of Isomorphous and Eutectoid Transformation Temperature in Binary and Ternary Zr Alloys," *J. Mater. Sci.*, **26**, 6218-22 (1991).
4. **Y.T. Zhu** and J.H. Devletian, "Practical Method for Precise DTA Testing of Highly Reactive Alloys," *Advanced Materials & Processes*, October 1991, p. 51-53.

5. **Y.T. Zhu** and J.H. Devletian, "Thermal Stress and Strain Effects on Phase Transition Temperatures in Differential Thermal Analysis Testing," *Metallurgical Transaction*, **23A**, 451-55 (1992).
6. **Y.T. Zhu** and G. Zong, "On the Application of the Statistical Strength Model of Fiber-Reinforced Composites," *J. Composite Materials*, **27**, 944-59 (1993).
7. A. Manthiram and **Y.T. Zhu**, "Chemistry of Electron Doped $\text{Ln}_{2-x}\text{Ce}_x\text{CuO}_4$ Superconductors," *J. Electronic Materials*, **22**, 1195-98 (1993).
8. **Y.T. Zhu**, J.H. Devletian and A. Manthiram, "Application of Differential Thermal Analysis in Phase Diagram Determination," *J. Phase Equilibria*, **15**, 37-41 (1994)
9. **Y.T. Zhu** and A. Manthiram, "Role of Bond Length Mismatch in $\text{Ln}_{2-x}\text{Ce}_x\text{CuO}_4$," *Physical Review B*, **49**, 6293-98 (1994).
10. **Y.T. Zhu** and A. Manthiram, "A New Route for the Synthesis of Tungsten Oxide Bronzes," *J. Solid State Chemistry*, **110**, 187-89 (1994).
11. **Y.T. Zhu** and A. Manthiram, "Role of Oxygen in $\text{Ln}_{2-x}\text{Ce}_x\text{CuO}_4$ Superconductors," *Physica C*, **224**, 256-62 (1994).
12. A. Manthiram and **Y.T. Zhu**, "On the Absence of Superconductivity in $\text{Gd}_{2-x}\text{Ce}_x\text{CuO}_4$," *Physica C*, **226**, 165-69 (1994).
13. J.P. Zhou, S.M. Savoy, J. Zhao, D.R. Riley, **Y.T. Zhu**, A. Manthiram and J. T. McDevitt, "Chemically Tailored Corrosion Resistant High- T_c Phases," *J. American Chemical Society*, **116**, 9389-90 (1994).
14. **Y.T. Zhu** and A. Manthiram, "A New Route for the Synthesis of WC-Co Nanocomposites," *J. American Ceramic Society* **77**, 2777-78 (1994).
15. **Y.T. Zhu**, G. Zong, A. Manthiram and Z. Eliezer, "Strength Analysis of Random Short Fiber Reinforced Metal Matrix Composite Materials," *J. Mater. Sci.*, **29**, 6281-86 (1994).
16. A. Manthiram, A. Dananjay and **Y.T. Zhu**, "A New Route to Reduced Transition Metal Oxides," *Chemistry of Materials*, **6**, 1601-02 (1994).
17. **Y.T. Zhu** and A. Manthiram, "A Thermogravimetric Study of the Influence of Internal Stress on Oxygen Variations in $\text{Ln}_{2-x}\text{Ce}_x\text{CuO}_4$," *J. Solid State Chemistry*, **114**, 491-98 (1995).
18. **Y.T. Zhu**, J.H. Devletian, SJ. Chen and A. Manthiram, "On the Nonuniform Distributions of Temperature and Thermal Stress in DTA Testing," *J. Testing and Evaluation* **23**, 63-66 (1995).
19. J.P. Zhou, S.M. Savoy, R.K. Lo, J. Zhao, M. Arendt, **Y.T. Zhu**, A. Manthiram and J.T. McDevitt, "Improved Corrosion Resistance of Cation Substituted $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$," *Applied Physics Letter*, **66**, 2900-02 (1995).
20. **Y.T. Zhu**, Y.P. Gao, J.H. Devletian and A. Manthiram, "Differential Thermal Analysis of Solid Zirconium," *J. Testing and Evaluation*, **23**, 431-35 (1995).
21. W.R. Blumenthal, **Y.T. Zhu**, T.C. Lowe, and R.J. Asaro, "Deformation State Effects on the J_c of BSCCO Tapes," *Physica C*, **260**, 33-40 (1996).

22. **Y.T. Zhu** and A. Manthiram, "Influence of Processing Parameters on the Formation of WC-Co Nanocomposite Powder Using Polymer as Carbon Source," *Composites Part B*, **27**, pp.407-13, 1996.
23. **Y.T. Zhu**, W.R. Blumenthal, and T.C. Lowe, "Determination of Non-Symmetric 3-D Fiber Orientation and Average Fiber Length in Short-Fiber Composites," *J. Composite Materials*, **31**, 1287-1301 (1997).
24. B.R. Mattes, H.L. Wang, D. Yang, **Y.T. Zhu**, W. R. Blumenthal, and M. Hundley, "Formation of conductive polyaniline fibers derived from highly concentrated emeraldine base solutions," *Synthetic Metals*, **84**, 45-49 (1997).
25. **Y.T. Zhu**, W.R. Blumenthal, S.T. Taylor, T.C. Lowe and B.L. Zhou, "Analysis of Size Dependence of Ceramic Fiber and Whisker Strength," *J. American Ceramic Society*, **80**, 1447-52 (1997).
26. **Y.T. Zhu**, W.R. Blumenthal, and T.C. Lowe, "The Tensile Strength of Short Fiber-Reinforced Composites," *J. Mater. Sci.*, **32**, 2037-43 (1997).
27. **Y.T. Zhu**, S.T. Taylor, M.G. Stout, D.P. Butt, W.R. Blumenthal, and T.C. Lowe, "On the Statistical Strength of Nicalon Fibers and its Characterization," *Ceramic Engineering and Science*, **18**, 119-26 (1997).
28. **Y.T. Zhu**, P.S. Baldonado, E.J. Peterson, D.E. Peterson, and F.M. Mueller, "Powder Diffraction Data of SmBa₄Cu₃O_{8.5+d}," *Powder Diffraction*, **12**, 242-44 (1997).
29. **Y.T. Zhu**, T.C. Lowe and R.J. Asaro, "Assessment of the Theoretical Basis of the *Rule of Additivity* for the Nucleation Incubation Time during Continuous Cooling," *J. Applied Physics*, **82**, 1129-37 (1997).
30. **Y.T. Zhu**, S.T. Taylor, M.G. Stout, D.P. Butt, and T.C. Lowe, "Kinetics of Thermal, Passive Oxidation of Nicalon Fibers," *J. American Ceramic Society*, **81**, 655-60 (1998).
31. **Y.T. Zhu**, D.P. Butt, S.T. Taylor and T.C. Lowe, "Evaluation of a Modified Weibull Distribution in Characterizing the Strength of Ceramic Fibers and Whiskers with Varying Diameters," *J. Testing and Evaluation*, **26**, 144-50 (1998).
32. S.T. Taylor, **Y.T. Zhu**, W.R. Blumenthal, M.G. Stout, D.P. Butt, and T.C. Lowe, "Characterization of Nicalon Fibers with Varying Diameters. Part I: Strength and Fracture Studies," *J. Mater. Sci.*, **33**, 1465-73 (1998).
33. **Y.T. Zhu**, S.T. Taylor, M.G. Stout, D.P. Butt, W.R. Blumenthal, and T.C. Lowe, "Characterization of Nicalon Fibers with Varying Diameters. Part II: Modified Weibull Distribution," *J. Mater. Sci.*, **33**, 1475-80 (1998).
34. **Y.T. Zhu**, P.S. Baldonado, E.J. Peterson, Y.S. Park, A. Manthiram, D.P. Butt, D.E. Peterson, F.M. Mueller, "Variation of Oxygen Content and Crystal Chemistry of YBa₄Cu₃O_{8.5+d}," *Physica C*, **298**, 29-36 (1998).
35. I.V. Alexandrov, **Y.T. Zhu**, T.C. Lowe, and R.Z. Valiev, "Severe plastic deformation: A new technique for powder consolidation and grain size refinement," *Powder Metallurgy*, **41**, 11-13 (1998) (**Invited contribution**).

36. I.V. Alexandrov, **Y.T. Zhu**, T.C. Lowe, R.K. Islamgaliev, and R.Z. Valiev, "Consolidation of Nanometer Sized Powders Using Severe Plastic Torsional Straining," *NanoStructured Materials*, **10**, 45-54 (1998).
37. I.V. Alexandrov, **Y.T. Zhu**, T.C. Lowe, R.K. Islamgaliev, and R.Z. Valiev, "Microstructure and Properties of Nanocomposites Obtained through SPTS-Consolidation of Powders," *Metallurgical and Materials Transactions*, **29A**, 2253-60 (1998).
38. **Y.T. Zhu**, E.J. Peterson, P.S. Baldonado, J.Y. Coulter, D.E. Peterson, and F.M. Mueller, "Synthesis and Characterization of the New Compound $\text{EuBa}_4\text{Cu}_3\text{O}_{8.5+\delta}$," *J. Physics and Chemistry of Solids*, **59**, 1331-36 (1998).
39. **Y.T. Zhu**, E.J. Peterson, P.S. Baldonado, J.Y. Coulter, D.E. Peterson, and F.M. Mueller, "Crystal Structure and Chemistry of Four New $\text{RBa}_4\text{Cu}_3\text{O}_{8.5+\delta}$ Compounds," *J. Alloys and Compounds*, **281**, 137-45 (1998).
40. **Y.T. Zhu**, J.A. Valdez, N. Shi, M.L. Lovato, M.G. Stout, S. Zhou, B.R. Blumenthal, and T.C. Lowe, "A Composite Reinforced with Bone-Shaped Short Fibers," *Scripta Mater.*, **38**, 1321-25 (1998).
41. S.T. Taylor, **Y.T. Zhu**, D.P. Butt, M.G. Stout, W.R. Blumenthal, and T.C. Lowe, "New Perspectives on the Fracture of Nicalon Fibers," *Special Technical Publication (STP) 1332*, ASTM, 393-403 (1999).
42. **Y.T. Zhu**, E.J. Peterson, P.S. Baldonado, J.Y. Coulter, D.E. Peterson, and F.M. Mueller, "Synthesis and Crystal Chemistry of the New Compounds $\text{GdBa}_4\text{Cu}_3\text{O}_{8.5+d}$, and $\text{DyBa}_4\text{Cu}_3\text{O}_{8.5+d}$," *J. Materials Research*, **14**, 334-39 (1999).
43. **Y.T. Zhu**, J.A. Valdez, I.J. Beyerlein, S. Zhou, C. Liu, M.G. Stout, D.P. Butt, and T.C. Lowe, "Mechanical Properties of Bone-Shaped-Short-Fiber Reinforced Composites," *Acta Mater.*, **47**, 1767-81 (1999).
44. V.V. Stolyarov, L.O. Shestakova, **Y.T. Zhu** and R.Z. Valiev, "Formation of Metastable States in Nanostructured Commercial Al- and Ti-Based Alloys by SPTS Technique," *NanoStructured Materials*, **12**, 923-26 (1999).
45. **Y.T. Zhu**, P.S. Baldonado, J.F. Bingert, T.G. Holesinger, J.O. Willis, and D.E. Peterson, "Compressive Anneal Processing (CAP) of Bi2223 Superconducting Tapes," *Superconductor Sci. & Tech.*, **12**, 640-44 (1999).
46. H. Jiang, **Y.T. Zhu**, and D.P. Butt, "Oxidation Kinetics of Hexagonal-shaped Single Crystal Si Whiskers," *J. American Ceramic Society*, **82**, 2791-95 (1999).
47. **Y.T. Zhu**, M. Stan, S.D. Conzone, and D.P. Butt, "Thermal Oxidation Kinetics of MoSi_2 -Based powders," *J. American Ceramic Society*, **82**, 2785-90 (1999).
48. V.V. Stolyarov, **Y.T. Zhu**, T.C. Lowe, and R.Z. Valiev, "A Two-Step SPD Processing of Ultrafine-Grained Titanium," *NanoStructured Materials*, **11**, 947-54 (1999).
49. H.L. Wang, R.J. Romero, B.R. Mattes, **Y.T. Zhu**, and M.J. Winokur, "Effect of Processing Conditions on the Properties of High Molecular Weight Conductive Polyaniline Fibers," *J. Polymer Science Part B: Polymer Physics*, **38**, 194-204 (2000).

50. V.V. Stolyarov, **Y.T. Zhu**, T.C. Lowe, and R.Z. Valiev, "Processing Nanocrystalline Ti and its Nanocomposites from Micrometer-Sized Ti Powder Using High Pressure Torsion," *Mater. Sci. Eng.*, **A282**, 78-85(2000).
51. H.G. Jiang, J.A. Valdez, **Y.T. Zhu**, I.J. Beyerlein and T.C. Lowe, "Strength and Toughness of Bone-Shaped Steel Wire Reinforced Concrete," *Composite Sci. and Tech.*, **60**, 1753-61(2000).
52. H. Jiang, **Y.T. Zhu**, D.P. Butt, I.V. Alexandrov, and T.C. Lowe, "Microstructural Evolution, Microhardness and Thermal Stability of HPT-Processed Cu," *Mater. Sci. Eng.*, **A290**, 128-38 (2000).
53. **Y.T. Zhu** and T.C. Lowe, "Application of, and precautions for use of, the rule of additivity in phase transformation," *Metallurgical and Materials Transactions B*, **31**, 675-82 (2000).
54. **Y.T. Zhu** and T.C. Lowe, "Observations and Issues on Mechanism of Grain Refinement During ECAP Process," *Mater. Sci. Eng.*, **A291**, 46-53 (2000).
55. J. Huang and **Y.T. Zhu**, "Review on Advances in the Synthesis and Characterization of Boron Nitride," *Defects and Diffusions Forum, Defects and Diffusion in Ceramics*, Scitec Pub. Inc., pp 1-32 (2000).
56. V.V. Stolyarov, **Y.T. Zhu**, I.V. Alexandrov, T.C. Lowe and R.Z. Valiev, "Influence of ECAP Routes on the Microstructure and Properties of Pure Ti," *Mater. Sci. Eng.*, **A299**, 59-67 (2001).
57. V.V. Stolyarov, **Y.T. Zhu**, T.C. Lowe and R.Z. Valiev, "Microstructure and Properties of Pure Ti Processed by ECAP and Cold Extrusion," *Mater. Sci. Eng.*, **A303**, 82-89 (2001).
58. J. Huang, **Y.T. Zhu** and H. Mori, "Structure and Phase Characteristics of Amorphous Boron-Carbon-Nitrogen under High Pressure and High Temperature," *J. Materials Research*, **16**, 1178-84 (2001).
59. J. Huang, **Y.T. Zhu**, H. Jiang and T.C. Lowe, "Microstructures and Dislocation Configurations in Bulk Nanostructured Cu Processed by Repetitive Corrugation and Straightening," *Acta Mater.*, **49**, 1497-1505 (2001).
60. **Y.T. Zhu**, H. Jiang, J. Huang and T.C. Lowe, "A New Route To Bulk Nanostructured Metals," *Metallurgical and Materials Transactions*, **32A**, 1559-62 (2001).
61. **Y.T. Zhu**, I.J. Beyerlein, J.A. Valdez, and T.C. Lowe, "Fracture Toughness of a Composite Reinforced with Bone-Shaped Short Fibers," *Mater. Sci. Eng.*, **A317**, 93-100 (2001).
62. D. Jia, Y.M. Wang, K.T. Ramesh E. Ma, **Y.T. Zhu**, and R.Z. Valiev, "Deformation behavior of ultrafine-grained titanium," *Applied Physics Letter*, **79**, 611-13 (2001).
63. I.J. Beyerlein, **Y.T. Zhu**, and S. Mahesh, "On the Influence of Fiber Shape in Bone-Shaped Short Fiber Composites," *Composite Sci. and Tech.*, **61**, 1341-57 (2001).
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